A sturdy babushka (grandmother) goes shopping in Moscow

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NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART, COVER AND ABOVE

RUSH HOUR—Crowds leave shops and offices on a street near Red Square

If You Lived in Moscow. . .

SUPPOSE FOR a few minutes that you were living in Moscow. Your life would be quite different from what it is today.

For one thing, you'd spend more time in school—and probably more time on homework.

Russian children are in the classroom six hours a day six days a week.

Instead of attending for about 180 days as in the United States, you would average 213 days of school a year.

Homework has been so heavy that a Soviet medical group has recommended that it be cut down—there were too many students suffering from nervousness and eyestrain.

In the first 10 years of study, you would be taught more than the American child learns in 12.

The chief emphasis in the schools is science. Every year you would take math. In addition, you would have four years of chemistry, five years of physics, and six of biology.

One educator declares that the Russian graduating from the 10th grade has a better scientific education than most graduates of American colleges.

Why do the Russians work so hard on science? Because they believe that science is the means toward a better life—as well as world power.

Russia is a nation struggling to become modern. In some fields she has already succeeded—for example, she fired into orbit the first satellite, the *Sputnik*.

In other fields she lags behind. In recent years, so much of Rus-

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sia's time and wealth has been spent on heavy industry, missiles, and armaments, that there has been little left over to produce goods for the people to use.

In Russia, the government controls everything. It decides how many houses will be built, how many refrigerators produced, how much corn grown. It even tries to decide how many fish shall be caught. (Sometimes the fish don't cooperate.)

Theoretically, the *people* of Russia jointly own all the factories and farms.

This leads to some wry jokes. Russians say that in America the bosses own the factory, but the workers own the cars it produces. In Russia, the workers own the factory – but only the bosses have cars.

In addition to science, languages receive much attention in Soviet schools. You would

FRANC SHOR, NATIONAL GEOGRAPHIC STAFF

NEWSSTAND OFFERS only government-approved reading matter. Its sign reads, "Central Administration for Printed Matter Distribution."

Below, women lay sidewalks beside a new apartment house project on the Lenin Prospect, named for a founder of Communist Russia.

NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART

NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART

SOFT DRINK STAND vendor fills glasses for customers from a cart near the Moskva River. Russians are fond of fruit drinks, even fonder of ice cream. They have been known to stand in line in a snowstorm to buy ice cream.

study foreign language five years. You could choose the one you want—the only choice allowed you in setting up the course of study. (Seventy percent choose English, next most popular is German.)

After school, if you were a Russian child, you would return to your home—most likely a single room which holds your whole family. Housing is the worst shortage in Russia.

Your mother would probably be at work when you got home. Because so many Russian men were killed in World War II, women's labor is important. Also, wages are low and the wife's salary is needed for the family. Overall, some 45 percent of Russian jobs are held by women—they are doctors, they sweep streets, shovel snow, operate machines in factories.

As a child in Russia, you are a privileged person. You represent the glorious future, when "Russia will have surpassed the United States in all things, and there will be plenty for all."

You have better clothes than your parents; on a crowded street-car or subway, you sit while your parents stand. If you can pass the stiff examination, you will not only be admitted to a university but paid to attend. (You will have to work at a government-assigned job when you get out, however.)

What you cannot look forward to is freedom.

Although controls are milder under the current leader, Khrushchev, than they were under Stalin, you will read only the books and magazines and newspapers the state says you can—opinions or facts the state doesn't approve are simply not published.

You will not be permitted to travel abroad at will. You will earn the wages decreed by the state; you will never go on strike for more money—the labor unions are state-controlled, too, and allow no strikes.

You will most certainly vote in elections—99 percent of Russians do—but you will have no choice of who to vote for. In Russian elections there is only one candidate for each office—you vote for the person chosen by the Communist Party. F.S.

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Map Compares United States and Russia

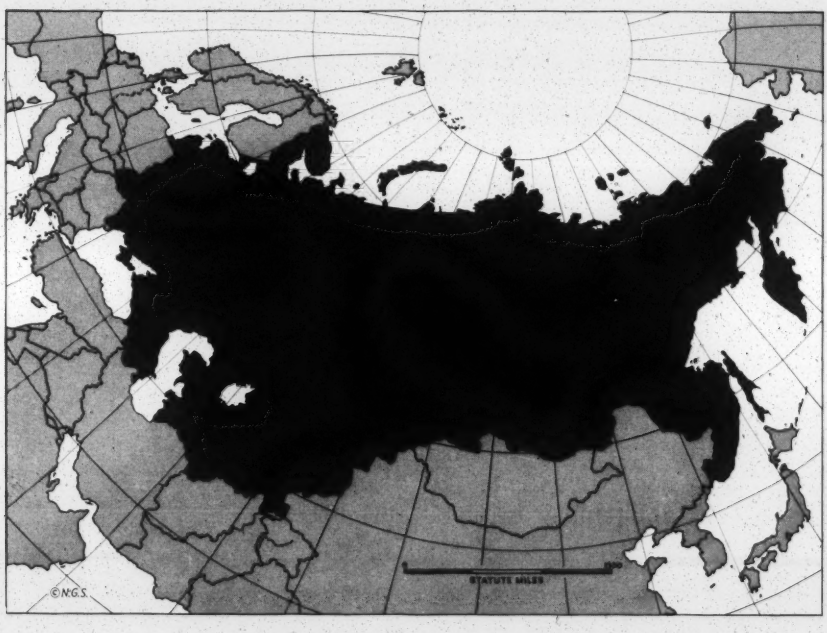
IT IS EASY to think of Russia in terms of Moscow—but highly misleading.

The Union of Soviet Socialist Republics, the world's largest nation, covers half of Europe and a third of Asia. It occupies more than one-seventh of the Earth's entire land area.

tance from New York to San Francisco.

Of the world's 24 time zones Russia spans 11; the United States, 7.

Most of Russia's 209 million people live in the western, or European, section. Recently, however, the Russians have made



On this map, the U.S.S.R. is indicated by the dark gray tone. For comparison in size, the map maker placed over it the United States (black). Even with the addition of Hawaii and Alaska, the United States is much smaller —3½ million square miles to the Soviet Union's 8½ million.

From the Bering Sea at far right to the Polish border on the left, the U.S.S.R. stretches 6,000 miles, more than twice the distance from New York to San Francisco.

strong efforts to populate and use the vast reaches of Siberia, a relatively empty land that stretches across five million square miles of Asia.

As the map shows, the Soviet Union touches 12 other countries, yet its seacoasts are longer than its land frontiers. The longest coast, at the top of the map, borders the Arctic Ocean, frozen and useless for surface ships most of the year.

Mongolia Meets 20th Century

THE PEOPLE of ancient Mongolia are in the middle of a revolution. It is a bloodless revolt against their own old-fashioned way of life.

Sharp contrasts mark their country, the Mongolian Republic, often called Outer Mongolia. Many people live as their ancestors did centuries ago. Others are learning the ways of the 20th century.

Only about 30 miles from the modern national capital, Ulan Bator—a city with a radio tower said to be the highest in Asia—your car may get stuck in the mud. Many "roads" are only ruts.

A lonely horseman tending his flock in the vast grasslands of the interior shields his eyes to watch a gleaming silver plane disappear into the sun.

A man wearing the traditional *del,* a long-sleeved, ankle-length robe sashed about the waist, worn by men and women alike, roars down a city street on a motorcycle.

The Mongolian Republic lies between the U.S.S.R. and China (see map). It is nearly three times the size of France, but only a million or so people inhabit its deserts, meadowlands, and mountains.

Cities and towns are small and few. Ulan Bator, the largest, holds fewer people than New Haven, Connecticut.

The Mongolian Republic is chiefly plateau or steppe. High jagged mountains rim it on the north, west, and east. The harsh Gobi Desert edges it on the southeast.

The steppe area is a great natural pasture, a seemingly endless sea of grass and wild flowers. Eagles circle in the sky. Chattering prairie dogs sit with folded paws beside burrows. Antelope graze the lush meadows.

It is a well-watered land. Black storks wade in brooks. Lakes are spotted with ducks, geese, and swans. Winding rivers outlined by small green willows interrupt the expanse of grass. Fish swim the waters.

WORD OF THE WEEK

Steppe (stĕp), *n. The Russian word for what we in the United States and Canada call plains (See also pages 20-21). Usually level, steppes get enough water to grow grass, but not enough to nourish trees. The largest steppes in the world lie in Central Asia.*

Except when the north wind brings snow-laden clouds, the sky is always blue.

Horses, camels, and now jeeps are the basic transport across this practically roadless green universe. In a few places isolated piles of stones, sometimes ornamented with a sheep's skull, have been set up to guide the traveler. At night he navigates by the stars like a ship at sea.

Here for unknown thousands of years sun-leathered herdsmen on horseback have grazed cattle, sheep, and goats.

Life is as simple as it was cen-

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turies ago. When the rains are plentiful, the grass is thick and rich. On good grass, the animals grow fat and healthy. When the animals are well fed, the people fare well.

From the animals they get milk and meat, skins for clothing and shelter, and dung to fuel their fires. Everyone rides; children grow up on horseback.

Nomads, they follow their flocks, taking along cone-shaped hide tents called *yurts*.

From this green plateau the great Mongol ruler, Genghis Khan, sent conquering hordes of cavalrymen over much of the Asian continent—and all the way to Europe. He built a huge empire 700 years ago. The moment of glory was short, however. The empire soon crumbled. Only a few stones mark the site of the emperor's capital, Karakorum.

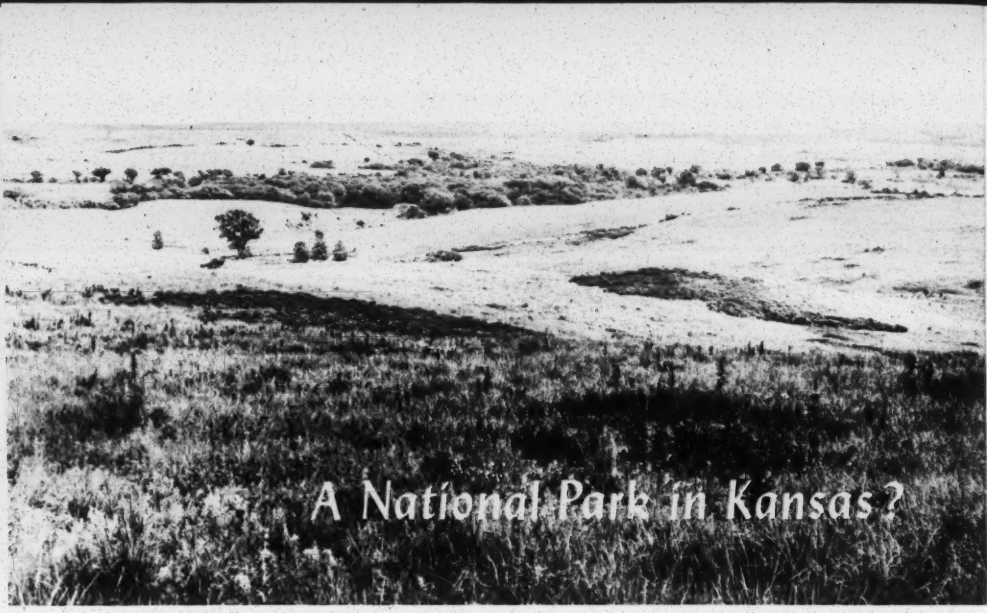
Chinese overran Mongolia in the 17th century and ruled it until 1945. They still hold Inner Mongolia. The Mongolian Republic is now an "independent nation" and Communist satellite.

Its leaders are trying to bring the people up to date. Airlines and a railroad link Ulan Bator with Russia and China.

New factories in Ulan Bator turn out shoes, textiles, leather goods. Schools rise. Doctors, nurses, and teachers emerge. Blocks of apartment houses displace colonies of yurts in the capital. Western clothes slowly replace traditional Mongol dress.

Laborers stripe grasslands with roads. Herdsmen quit their wanderings to work on new state-run farms.

Long isolated from all but its nearest neighbors, the Mongolian Republic now seeks contact with the outer world. Trade missions visit other Asian countries. Chess players, wrestlers, and archers join international clubs. Scientists attend overseas conferences. This year the republic hopes to gain membership in the United Nations. L.B.



A National Park in Kansas?

W. G. TOMANEK

THIS ROLLING prairie may be preserved for public enjoyment and study

THE ORIGINAL national parks preserved the natural wonders of mountain and canyon areas of the West. Later, eastern mountain ranges became national parks. Then seashore areas were added to the park system.

Today the only major type of land that is not preserved in a national park is the vast grassland in the middle part of the United States. These almost treeless regions of prairie or low plains live in American history and folklore as the trackless sea of grass grimly traversed by the pioneers in covered wagons.

Headed for California and Oregon, the pioneers fought mud, dust, and Indians to cross the empty land of the big sky. Some gave up and decided to try to establish homes in the grass. This seemed strange to them, for they had always lived in wooded country.

They discovered that a special plow would cut the thick, matted prairie sod. The rich loam underneath grew the best crops they had ever seen. They used chunks of the sod to build their houses, and thus overcame the lack of wood.

Land-hungry farmers from rocky and hilly eastern lands gobbled up the prairies. Today the upper Mississippi valley is one of the most productive crop-growing areas on earth.

Little of the original prairie is left. The writer of this article will always remember when, as a boy, he plowed a few strips of prairie sod—some of the last remaining virgin grassland in Vernon County, Missouri. In those days conservation groups had already become interested in preserving, or re-creating, an "island" of grassland among the farms.

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National Park Service planners recently found an area in northwest Kansas that still presents all the features of the original prairie except such large wild animals as bison (buffalo), elk, and pronghorn antelope. They are proposing it as a new national park, a place where Americans may experience the prairie much as it was when the Indian owned it and white men first saw it.

The Flint Hills area spreading north of Manhattan, Kansas, displays several miles of bluestem grass, Indian-grass, and other prairie varieties. Verbena and wild indigo make blue dots in the seemingly endless green carpet. White fleabane, lavender gay-feather, yellow sunflowers, and goldenrod add color.

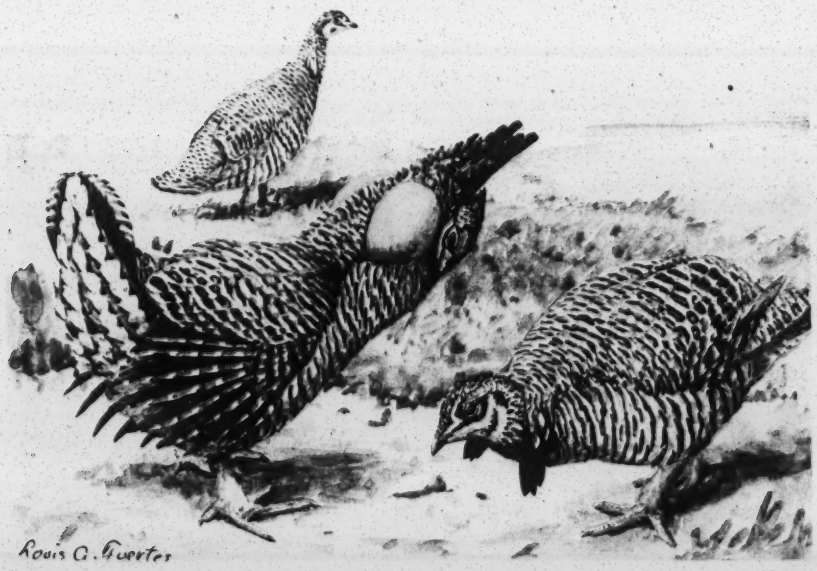
Life on the prairie was highly competitive—plant fighting plant for water and light, bison feeding on the grass, and wolf and Indian living on the bison.

Should the park be created (it takes an act of Congress to do it) bison, elk, pronghorn, and perhaps wild turkey will be reintroduced. Deer and coyote are present in numbers, as are the prairie chicken, meadow-lark, upland plover, dickcissel, and grasshopper sparrow.

But perhaps best of all for visitors will be the limitless eye-resting views so different from mountain, canyon, and seashore.

One lover of the prairie has asked that we never think of the flatlands as "monotonous and dreary, for nowhere does nature sit more majestically enthroned .... What can be more beautiful and charming than a summer's day—What more sublime and terrific than a thunderstorm, on these plains?" R.G.

PRAIRIE CHICKENS, left, still abound in the proposed prairie national park area. The heath hen, right, is extinct. None have been seen alive since 1932.



Last week I told you about a party scaling a high peak in the far-off Himalayas. That was an outstanding adventure, but I hope you realize that to be an explorer you don't have to go to the ends of the earth.

You are an explorer if you turn over a spadeful of earth in your backyard and study its teeming life. Perhaps you'll discover a cicada nymph and learn about the underground stage in the life cycle of the "locust bug" (see Look Around).

Is there a stream running through a park near your suburban home? Follow it beyond the end of the park to where it joins another stream and you are an explorer. You'll discover things about flora and fauna and the lay of the land you never suspected. Your horizon will be widened.

Remember that discovery can be a personal matter; you don't have to be first.

But the interest in life that urges you at an early age to go on little expeditions can blossom later into full-fledged scientific research.

Three teen-age boys, digging in a New Jersey quarry, uncovered the fossil remains of a gliding reptile older than any previously known to science.

In Ohio a girl located a fish skull believed to be 250 million years old.

Hiking in the Colorado Rockies, a boy discovered a stream that did not appear on Geological Survey maps.

Following a bull-dozer, two Maryland boys, 10 and 12, found a fossil clam. The Smithsonian Institution said it dated from the Cretaceous Age.

So dig, climb, walk, look, ask, and learn, and you'll find your world more stimulating and rewarding than you ever imagined. But don't undertake too much at an early age. Be content to go along with an adult on missions that might be dangerous.

Football Cheers Ape War Cries

Football cheers grew out of the primitive war cry.

The first football cheer was based, in fact, on a specific American battle cry. At a football game in 1869, some Princetonians roared out a lusty "Siss, boom, ah." The cheer came from the rocket yell of the Seventh Regiment of New York which had passed through the Princeton, New Jersey, campus during the Civil War. The college boys soon embroidered the yell into a full-fledged cheer: "Ray, ray, ray, Tiger, tiger, tiger, Siss, siss, siss, Boom, boom, boom, Aaaaaaaaaah. Princeton, Princeton, Princeton!" Within a few years organized cheering was standard procedure at football games.

The Confederate Army also made a contribution to football cheering. The fearsome Rebel yell echoes from many southern stadiums.

Yale took its "brekekekex, ko-ax, ko-ax" cheer from an ancient Greek play.

LOOK AROUND

In late summer and fall "ghost bugs" can be seen hanging from tree trunks and twigs near the ground.

They look like insects but are only shells; there is nothing inside.

These apparitions are the cast-off armor of **cicadas,** which have crawled from the ground and then worked themselves right out of their skins (left, life size). After escaping, they fly on new wings into the trees to start their buzzing songs, a sign of approaching autumn.

GEORGE F. MOBLEY

Some species live underground for 4 or 5 years, sucking sap from plant roots. The most famous of cicadas is the 17-year "locust." All cicadas are sometimes called locusts. The true locusts, oddly enough, are really grasshoppers.

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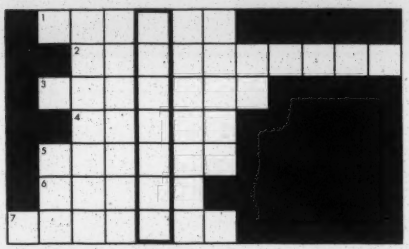
GEO-GRAPH

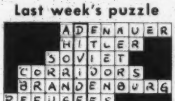
Solve the key word (heavy outline) to learn the center of government in Russia. All words are used in the Moscow story, pages 14-16.



ACROSS

1. River that flows through Moscow
2. Russia's ruler
3. Chief study in Russian schools
4. Forty-five percent of Russian jobs are held by _____
5. World War II Russian dictator
6. A founder of Communist Russia
7. Triumph of Soviet science

Last week's puzzle



World a Babel of 3,000 Tongues

At least 3,000 languages and major dialects are spoken today. This total does not include many hundreds of splinter languages known only to groups of tribesmen.

Chinese is spoken by the most people. English is the most widespread. Other major tongues are Hindustani, Russian, Spanish, German, French, and Japanese.

Languages constantly borrow from each other. Frenchmen now use *sandwich, film,* and *baby* every day. Italians have adopted *nylon, football,* and *cold cream.*

The Japanese businessman rides a *busa* to work, lights his cigarette with a *matchi.* Latin Americans drink *cocktails* and *ginger ale.* Mexicans play *beisbol* and eat *superhamburguesas.*

In return, English has taken *ski, geyser,* and *slalom* from Scandinavian tongues; *Soviet* and *Sputnik* from Russian; *pizza* and *influenza* from Italian; *fooey* and *kibitzer* from Yiddish; *kowtow* and *typhoon* from Chinese; and *yogi* and *khaki* from Hindustani.

Stalactites In Lincoln Memorial

Great icicles of stone are forming in the basement of the Lincoln Memorial in downtown Washington, D. C.

Water seeping through the marble has already built seven-foot-long needle-like formations of stone, properly called stalactites and stalagmites.

These rock formations are usually found in caves, though some small stalactites may form under stone bridges. They are shaped when water seeping through the roof of the cave—especially a limestone cave—carries with it a mineral called calcium carbonate, or calcite. The water evaporates, leaving the mineral clinging to the ceiling of the cave.

Those formations which build up from the cave floor are called stalagmites. Those which hang from the ceiling are called stalactites. Sometimes the two meet to form a solid column, floor to ceiling.

Spectacular displays occur in Carlsbad Caverns, New Mexico; Mammoth Cave, Kentucky; and Luray Caverns, Virginia.

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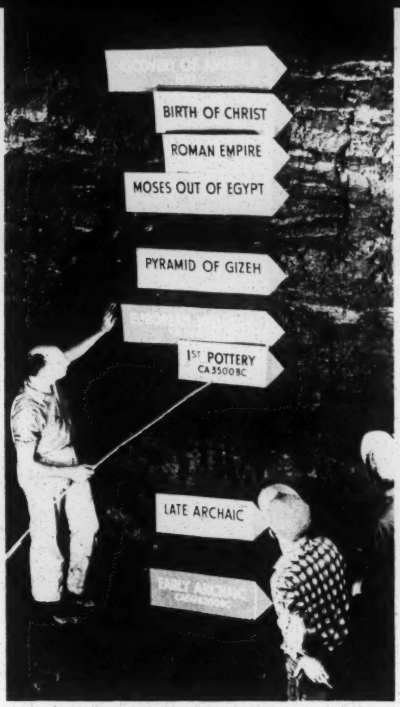
President Kennedy Proclaims Russell Cave a National Site

President Kennedy has established Russell Cave in Jackson County, Alabama, as a national monument.

The limestone cave is the oldest known home of primitive man in the southeastern United States. Excavations have shown that it was lived in some 9,000 years ago.

More than this, the cave is a "calendar" of human existence. Early man was a messy housekeeper. For thousands of years the cave floor was "cleaned" by scattering fresh soil over the debris. Now scientists, digging layer by layer, have uncovered ancient man's bone tools, broken pottery, fishhooks, even his skeletons, neatly preserved in order.

The photograph at right shows the dig marked off by time periods. The most recent remains, about 400 to 500 years old, lay only a few inches below the floor. The oldest discovery, the charcoal of a smothered fire, came to light 23 feet down, or 10 feet below the lowest sign. Someone warmed himself by this campfire 9,000 years ago.



NATIONAL GEOGRAPHIC PHOTOGRAPHER BATES LITTLEHALES

Ladder of time dates layers of Indian relics in the floor of Russell Cave, Alabama

Amateur archeologists, stumbling on a number of Indian relics, discovered the importance of Russell Cave. They notified the Smithsonian Institution which in turn interested the National Geographic Society. The Society bought the cave plus surrounding land, later presented it to the United States.

Teams of diggers have unearthed nearly 2½ tons of relics. Only a few inches below the floor, they found traces of Indians who lived between 1500 and 1650, when Europeans were struggling for footholds on the eastern coast.

Five feet deeper, they uncovered bone needles, stone arrowheads, and pottery of generations of Woodland people. These men had hunted in nearby woods between A.D. 500 and 1000 B.C.

Below the Woodland people, the diggers discovered remains of Archaic Man's life: primitive fishhooks, lamps of bearbone, and spears.

This trove of archeological treasure helps man know his ancient ancestors.

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- Preserving the Prairie

...and other features

Editor—Ralph Gray

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NEXT WEEK—
Brazil, United Nations

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